

REMARKS

Claims 1-37 and 39-42 were pending. Claims 1-37 and 39-42 were rejected. Claims 1, 4-5, 11, 14, 17, 23, 27, 33, and 39 have been amended. Claims 2, 13, 18-22, 24-26, 28-32, 34-37, and 40-43 have been canceled. Claims 1, 3-12, 14-17, 23, 27, 33, and 39 are currently pending.

Amendments

Claims 1 and 11 have been amended to substantially incorporate the features recited in claim 2 and to clarify the meaning of a weighted interpolation scheme. Support for this amendment may be found at least on page 8, lines 12-13 of the applicants' specification. Claim 2 has been canceled. Claim 1 has also been amended to clarify the meaning of direction. Support for this amendment may be found at least on page 12, lines 7-9 of the applicants' specification. No new matter has been added.

Claim 5 has been amended to clarify the antecedent basis in light of the amendment to claim 1. No new matter has been added.

Claim 11 has also been amended to substantially incorporate the features recited in claim 13. Claim 13 has been canceled. No new matter has been added.

Claim 14 has been amended to change the dependency from claim 13, now canceled, to claim 11. No new matter has been added.

Claims 17, 23, 27, 33, and 39 have been amended making them dependent upon either claim 1 or claim 11. Claims 18-22, 24-26, 28-32, 34-37, and 40-43 have been canceled. This was done to reduce the number of issues before the examiner without unduly limiting the scope of the claims. No new matter has been added.

Claim Rejections - 35 USC § 102

The examiner has maintained the rejection of claims 1, 3-4, 9-10, 17, 19-20, 22, 33, 35, and 36, stated in the previous office action dated October 30, 2006, without restatement. Claims 1, 3-4, 9-10, 17, 19-20, 22, 33, 35, 36, and 38 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,408,109 to William SILVER et al. (hereinafter Silver). The examiner considered the applicant's arguments regarding Silver and found them unpersuasive. The applicant agrees with the examiner's reading of Silver, in that Silver does indeed disclose identifying a vertical or horizontal direction as stated by the examiner.

Claim 1 has been amended to distinguish it from Silver at least by including the features recited in claim 2. Claims 3-4, 9-10, 17, and 33 are allowable at least because they are dependent upon claim 1. Claims 19-20, 22, 35, and 36 have been canceled.

Claim Rejections - 35 USC § 103(a)

Claims 11, and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,298,090 issued to Kiran CHALLAPALI et al. (hereinafter Challapali) in view of U.S. Patent No. 6,724,822 issued to Mi BI et al. (hereinafter Bi). Claims 13-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Challapali in view of Bi and Silver. Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Challapali in view of Bi, Silver and U.S. Patent No. 5,991,464 issued to Pohsiang HSU et al. (hereinafter Hsu). Claims 17-20 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Silver in view of Hsu. Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Silver in view of Hsu, and U.S. Patent No. 5,382,976 issued to Robert H. HIBBARD et al. (hereinafter Hibbard). Claims 27-29, 39 and 42 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Challapali in view of Hsu. Claim 30 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Challapali in view of Hsu, and U.S. Patent No. 6,970,179 issued to Timothy J. TRENARY et al. (hereinafter Trenary). Claims 31, 32, 40 and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Challapali in view of Hsu, and Silver. The examiner has maintained the rejections of claims 2, 5-8, 34, and 37 that were stated in the previous office action dated October 30, 2006, without restatement. Claims 2, 5-8 34, and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Silver in view of Hsu.

Silver discloses a method for detecting the sub-pixel location of edges in a digital image (Silver, title). Convolution kernels are used to estimate components of gradients in a digital image (Silver, column 5, lines 5-6). A parabolic interpolation curve is used for gradient directions that result in N-S or E-W neighbors, and a linear interpolation curve is used for gradient directions that result in NE-SW or SE-NW neighbors (Silver, column 16, lines 27-30). The final output is a list of edges (Silver, column 18, lines 46-48).

Hsu discloses a system and method for adaptive video image resolution enhancement (Hsu, Title). The adaptive video image resolution system includes an interpolation sub-system (Hsu, column 4, lines 32-34). The interpolation sub-system employs a classification module which designates pixels as either an oriented or non-oriented classification (Hsu, column 4, lines 61-65). Bilinear interpolation is selected for image data with a non-oriented classification (Hsu, column 5, lines 12-14). Adaptive interpolation is selected for image data with an oriented classification (Hsu, column 5, lines 17-19). The oriented classification is applied to a pixel if the image pixel's neighborhood contains image-defining edges (Hsu, column 5, lines 24-30). The non-oriented classification is applied to a pixel if the image pixel's neighborhood does not contain image-defining edges (Hsu, column

5, lines 30-33). Adaptive interpolation models the supplementary image pixels with a set of oriented polynomials that is a function of the dominant orientation parameter (Hsu, column 10, lines 43-51).

Challapali discloses a system for detecting redundant images in a video sequence (Challapali, Title). Telecines convert film data with a frame rate of 24 frames-per-second (fps) to video images with a frame rate of 30-60 fps (Challapali, column 1, lines 18-37). To do this, the Telecines add redundant images (Challapali, column 1, lines 37-42). A film detection circuit determines whether a target image in video sequence is a redundant image (Challapali, column 4, lines 57-59). A threshold is set based on differences in content between the target image and the at least one other image in the video sequence (Challapali, column 4, lines 64-67). Another threshold is set based on noise introduced into the video sequence by the Telecine (Challapali, column 5, lines 1-2). Coding circuitry only codes video data for images that are not redundant (Challapali, column 5, lines 60-61).

The applicants' have amended claims 1 and 11 to distinguish them from the prior art. It is the applicants position that the prior art methods did not apply a weighted interpolation scheme that place more weight on the positions closest to the pixel location when the gradient is in the horizontal or vertical direction and use bicubic or bilinear interpolation scheme when the direction of the gradient is not in the horizontal or vertical direction. Claims 1 and 11 are allowable for at least that reason.

Claims 3-10, 12, 14-17, 23, 27, 33, and 39 are allowable at least because they are dependent upon an allowable base claim.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration of the present application.

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